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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,776	12/26/2001	Toshiyuki Kambe	PNDF-01210	5681

466 7590 06/26/2003

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EXAMINER

VALENCIA, DANIEL E

ART UNIT PAPER NUMBER

2874

DATE MAILED: 06/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,776

Applicant(s)

KAMBE, TOSHIYUKI

Examiner

Daniel E Valencia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on Amendment C filed June 10, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-25, 33, 34 and 36-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-17 and 20-25 is/are allowed.
- 6) ☐ Claim(s) 18, 19, 33, 34 and 36-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

The communication filed on June 10, 2003 has been carefully studied by the Examiner. In accordance with the communication filed, new claims 36-38 have been acknowledged. The following is a summary of the status of the claims in the application:

1. Claims 1-25, 33, 34, and 36-38 remain pending in the application.
2. Claims 26-32 and 35 were cancelled in Paper No. 4.
3. Claims 1-17 and 20-25 were allowed in Paper No. 5.
4. Claims 18, 19, 33, and 34 were rejected in Paper No. 5.

In view of the Applicants remarks as well as further consideration of the claim language and the prior art, Examiner withdraws the § 102 rejection; however, a new § 103 rejection is applied. This Office Action is **Non-Final**; however, the next Office Action will be made **Final**.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 19, 33, 34, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thaniyavarn U.S. Patent Application Publication No. 2002/0025103

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A1. Refer to the appropriate drawings or parts of the specification. Thaniyavarn discloses a polarization independent broad wavelength band optical switch/modulators with essentially all the limitations of the abovementioned claims. Regarding claims 18, 19 and 33, Thaniyavarn discloses a waveguide-type optical control device (fig 3) comprising: a phase shifter (344) comprising two left and right optical waveguides, a first electrode (350) provided on the left side of the left optical waveguide, a second electrode (354) provided on the right side of the right optical waveguide, and a third electrode (352) provided between the two optical waveguides; a first directional coupler (342) that is connected to one end of the phase shifter and functions to branch an optical signal introduced through one of the two optical waveguides into the optical signal parts which are then introduced respectively into the two optical waveguides; and a second directional coupler (346) that is connected to the other end of the phase shifter and functions to couple the optical signal parts received respectively from the two optical waveguides.

Although the reference does not show that the same electrode is extended into the coupling region as in the phase shifting region, the reference nevertheless teaches an electrode extending into the coupling region. Additionally, Thaniyavarn teaches that it is advantageous to locate an electrode in the coupling region in order to affect the optical signal being coupled from or into the waveguide arms (paragraph 57). One of ordinary skill in the art would recognize that extending the electrode into the coupling region would be an obvious modification of the device disclosed by Thaniyavarn. Therefore, it would have been obvious to one of ordinary skill in the art at the time of

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invention to extend the electrodes from the phase shifting region into the coupling region.

Thaniyavarn further discloses that the third electrode can be disposed on the top surface of the two optical waveguides in its extended position (paragraph 54), as described by instant claim 34. With reference to claims 36-38, Thaniyavarn shows that the first and second directional couplers have two waveguides that diverge and converge toward each other keeping a coupling distance wherein electrodes are extended into the coupling region.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Azarbar U.S. Patent Application Publication No. 2002/0131745 discloses an electro-optic waveguide device with two direction couplers and three electrodes.

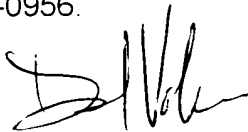
Hung U.S. Patent Nos. 6,535,653 and 6,567,599 discloses integrated optical modulators with electrodes disposed around the directional coupling region.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel E Valencia whose telephone number is (703)-305-4399. The examiner can normally be reached on Monday-Friday 9:30-6:00.


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The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-7724 for regular communications and (703)-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

A handwritten signature in black ink, appearing to be 'D. V. K.', located below the first paragraph.

DEV
June 16, 2003

A handwritten signature in black ink, appearing to be 'AKM ENAYET ULLAH', located above the printed name.
**AKM ENAYET ULLAH
PRIMARY EXAMINER**